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(54) TAILORING YEARN SYSTEM HAVING A TAILORING MECHANISM

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E03F 1/00 (2006.01)

(52) **U.S. Cl.**
CPC . ***E02B 3/10*** (2013.01); ***E03F 1/00*** (2013.01)

(58) **Field of Classification Search**
CPC E02B 3/10; E02B 3/04; E02B 3/06; E02B 3/062; E02B 3/14
See application file for complete search history.

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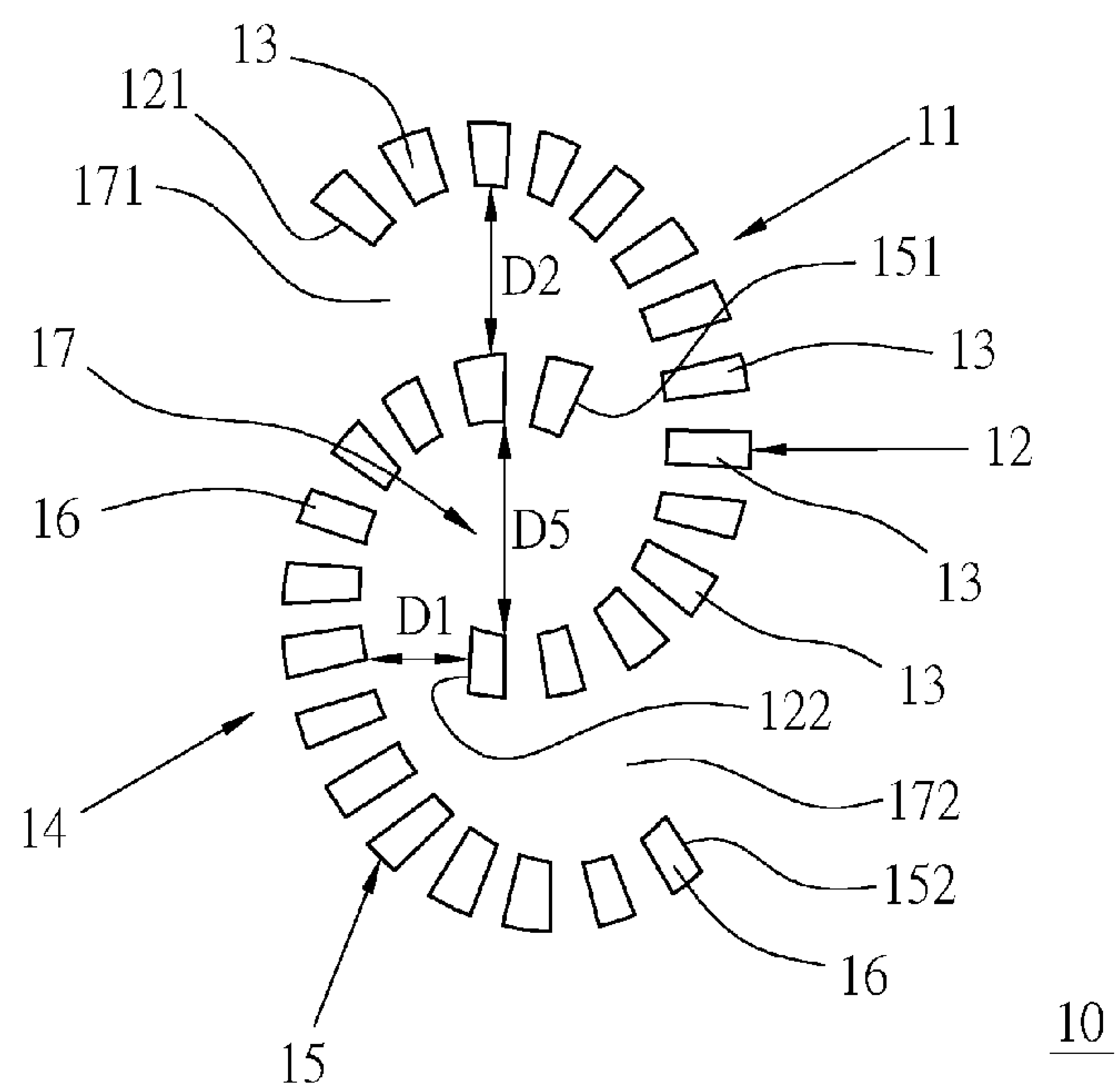
(57) **ABSTRACT**

A triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20] has a tailoring mechanism comprising a first unit having an arc-shaped first arcuate portion, and a second unit having an arc-shaped second arcuate portion, the first and second units stagger each other with concave arcuate surfaces facing opposite directions by center axes of curvature of the first and second arcuate portions parallelling each other to cause an arcuate end of the first arcuate portion locate between two arcuate ends of the second arcuate portion and separated from the concave arcuate surface of the second arcuate portion by a first distance, and to cause an arcuate end of the second arcuate portion locate between two arcuate ends of the first arcuate portion and separated from the first arcuate portion by a second distance, thereby the first and second arcuate portions jointly define a curved channel.

27 Claims, 9 Drawing Sheets



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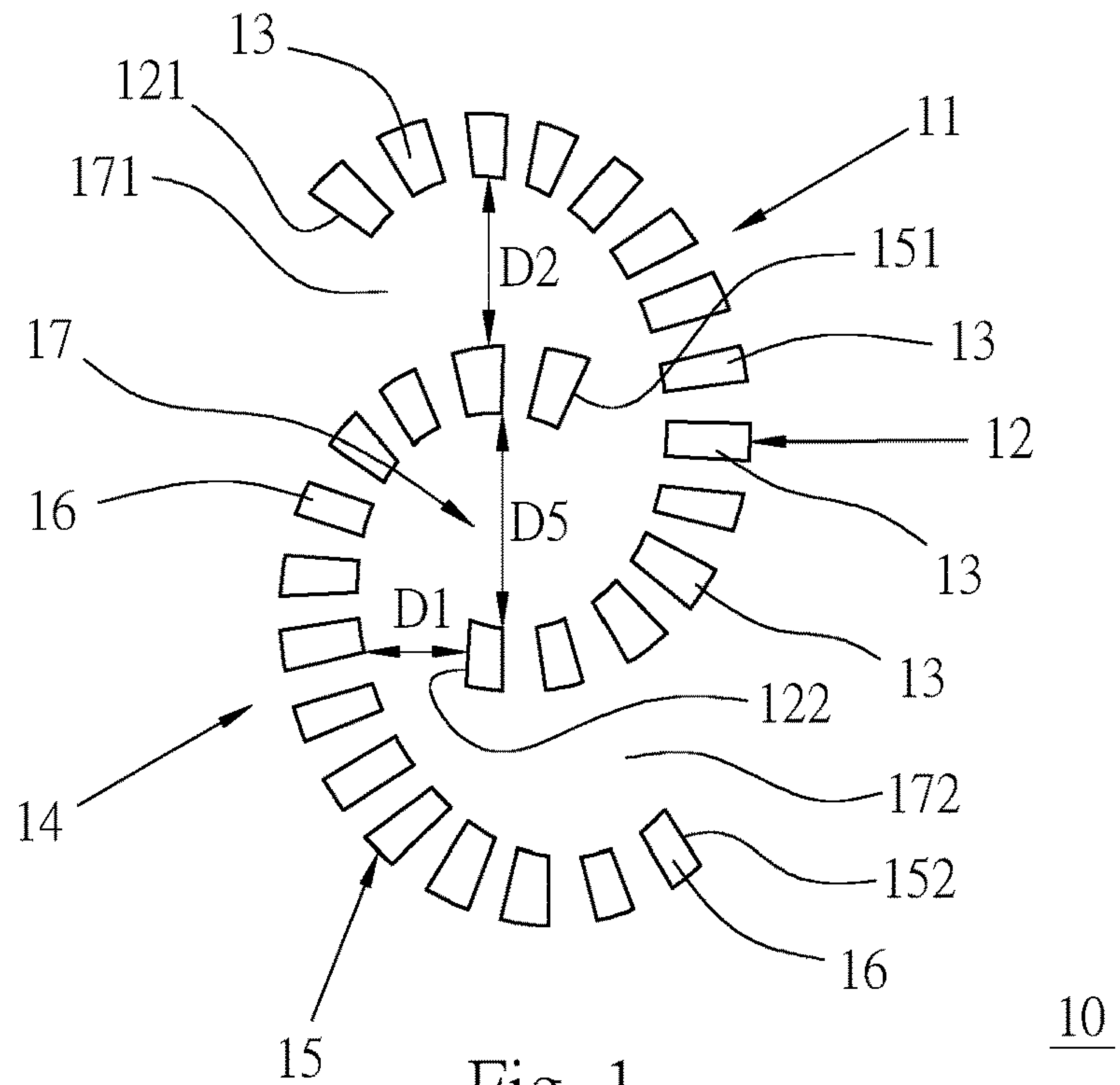
13
121
171
11
D2
151
17
13
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D5
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D1
13
122
14
172
152
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15
10

Fig. 1

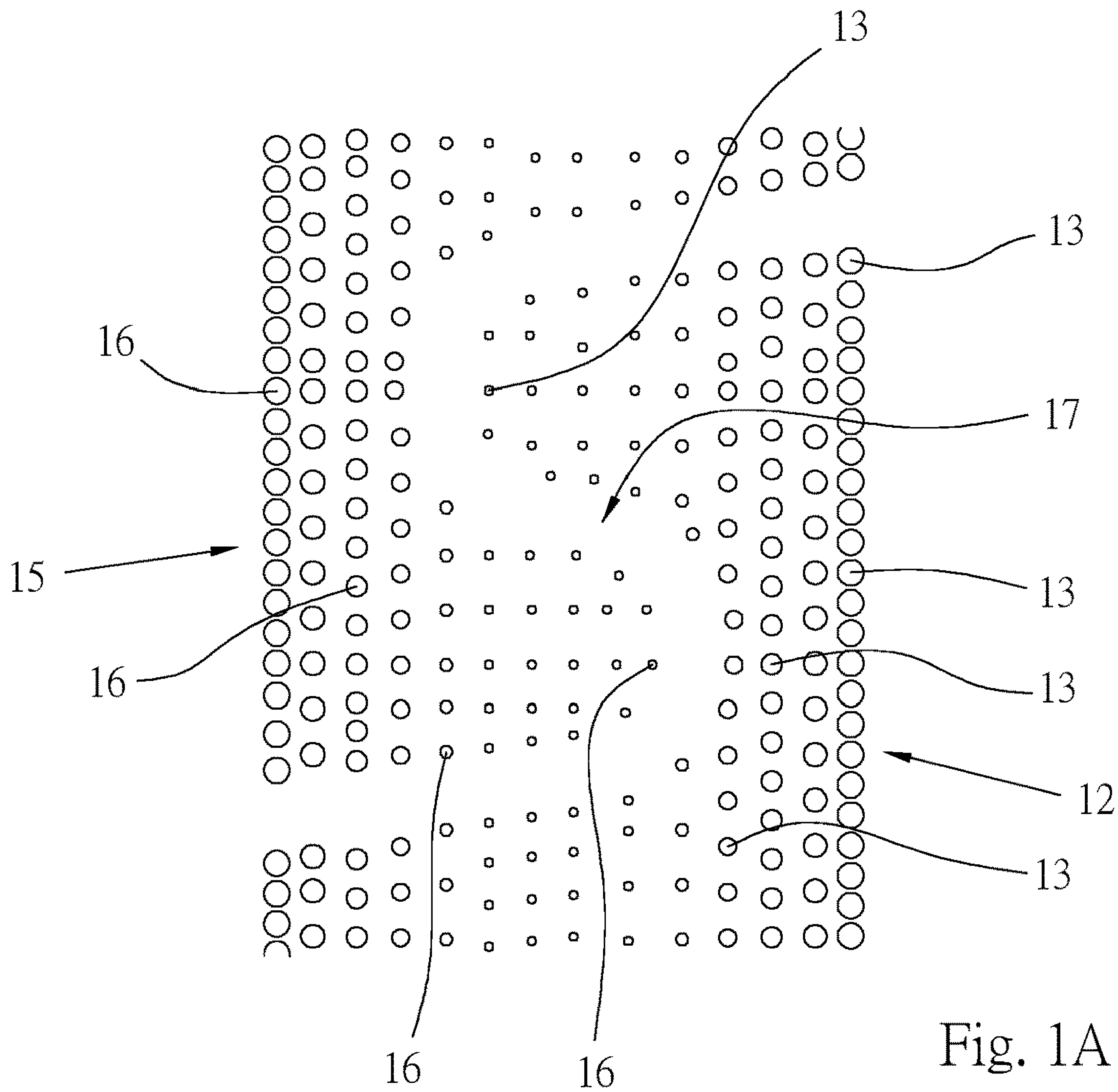
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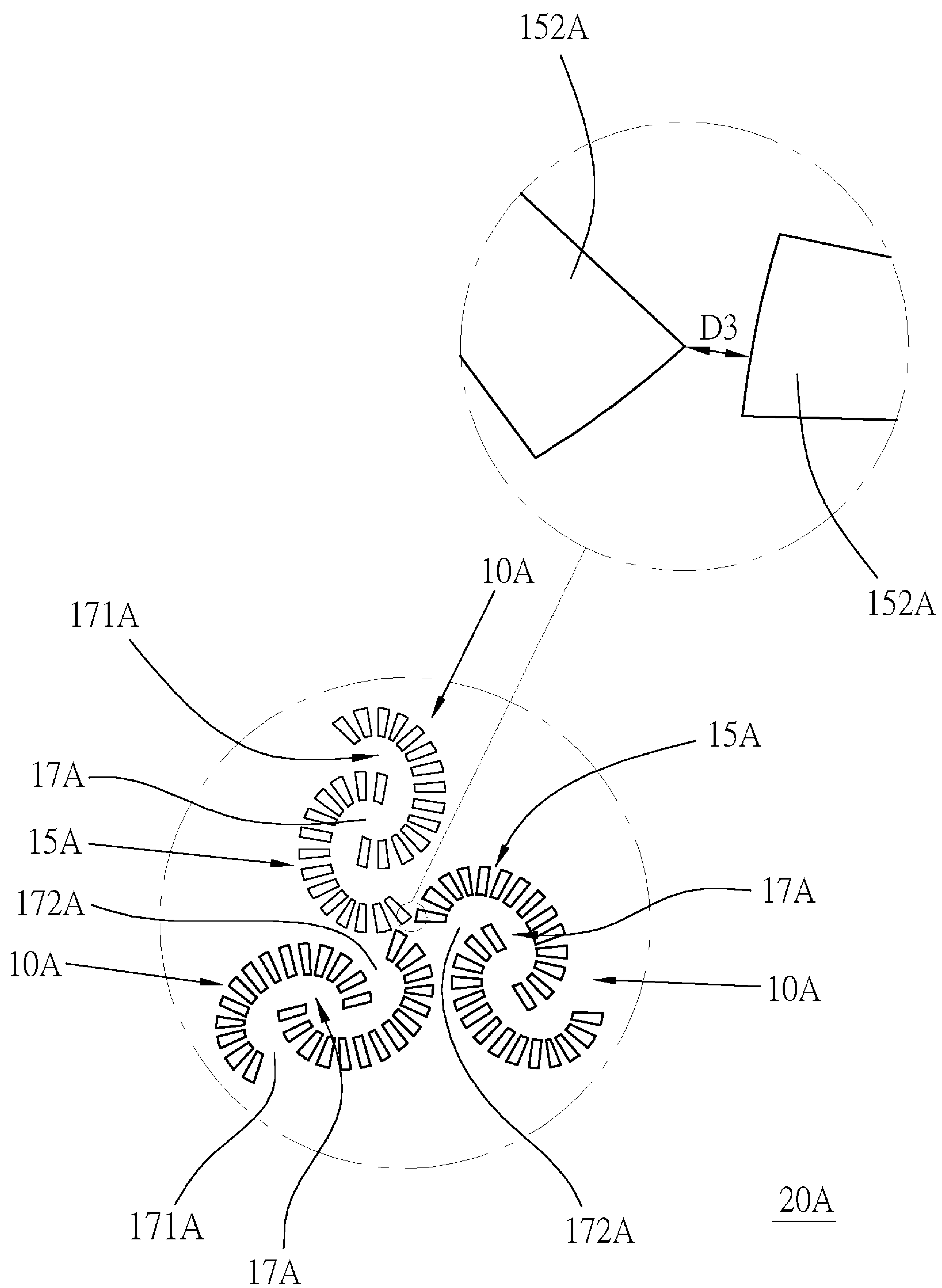
Fig. 1A


152A
D3
152A
10A
171A
17A
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172A
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17A
172A
20A

Fig. 2

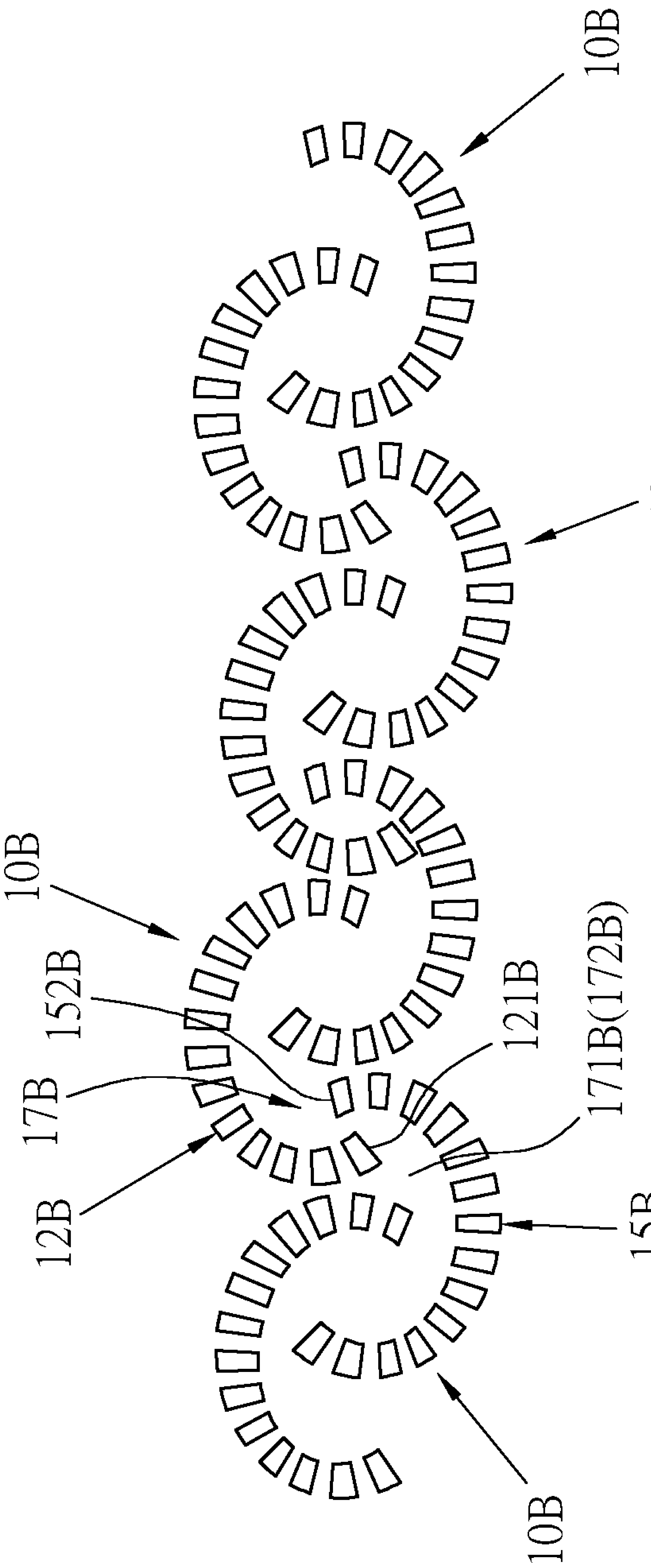
10B
10B
10B
152B
17B
12B
121B
171B(172B)
15B
10B

Fig. 3

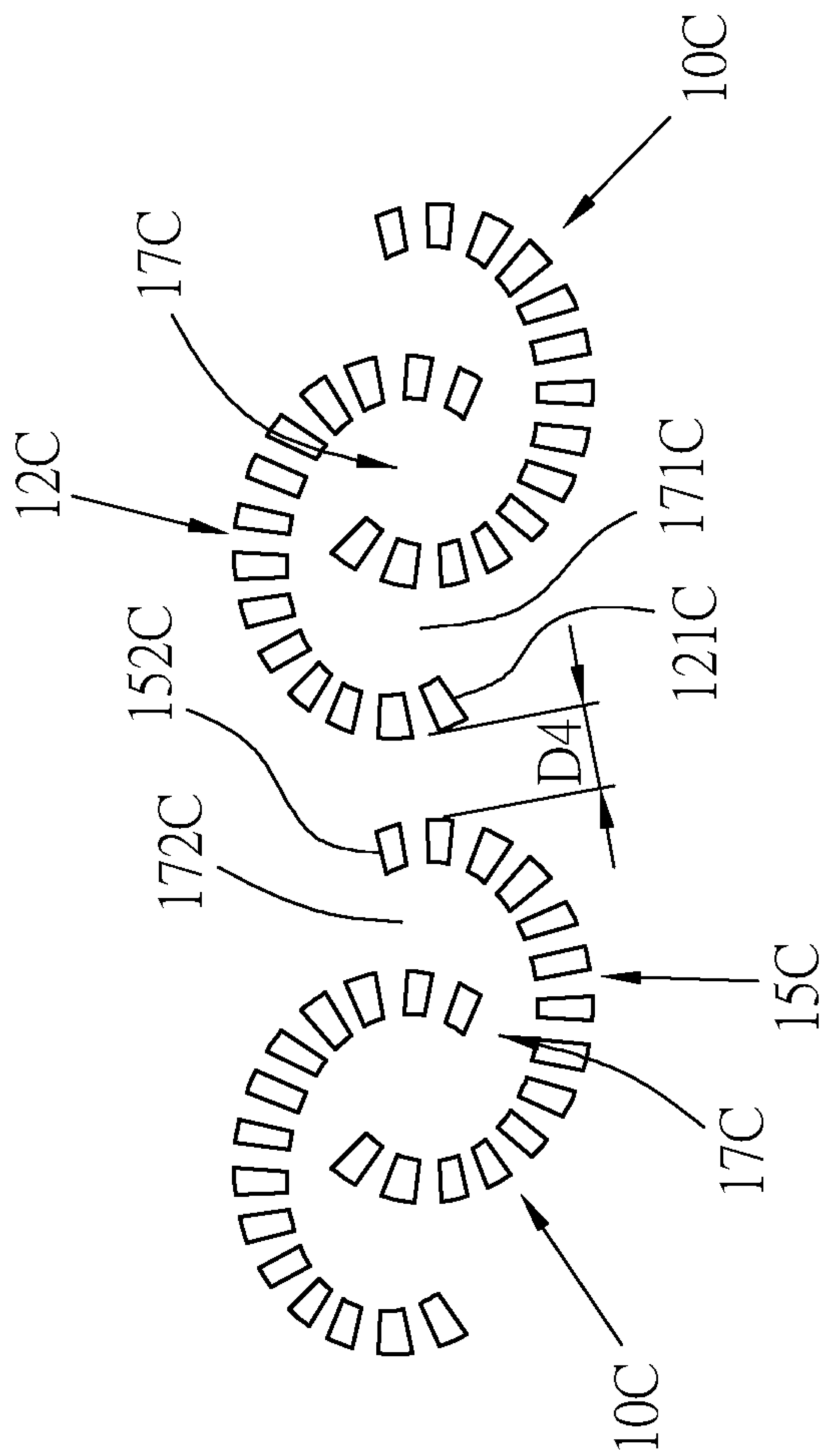
10C
17C
12C
171C
121C
152C
D4
172C
15C
17C
10C

Fig. 4

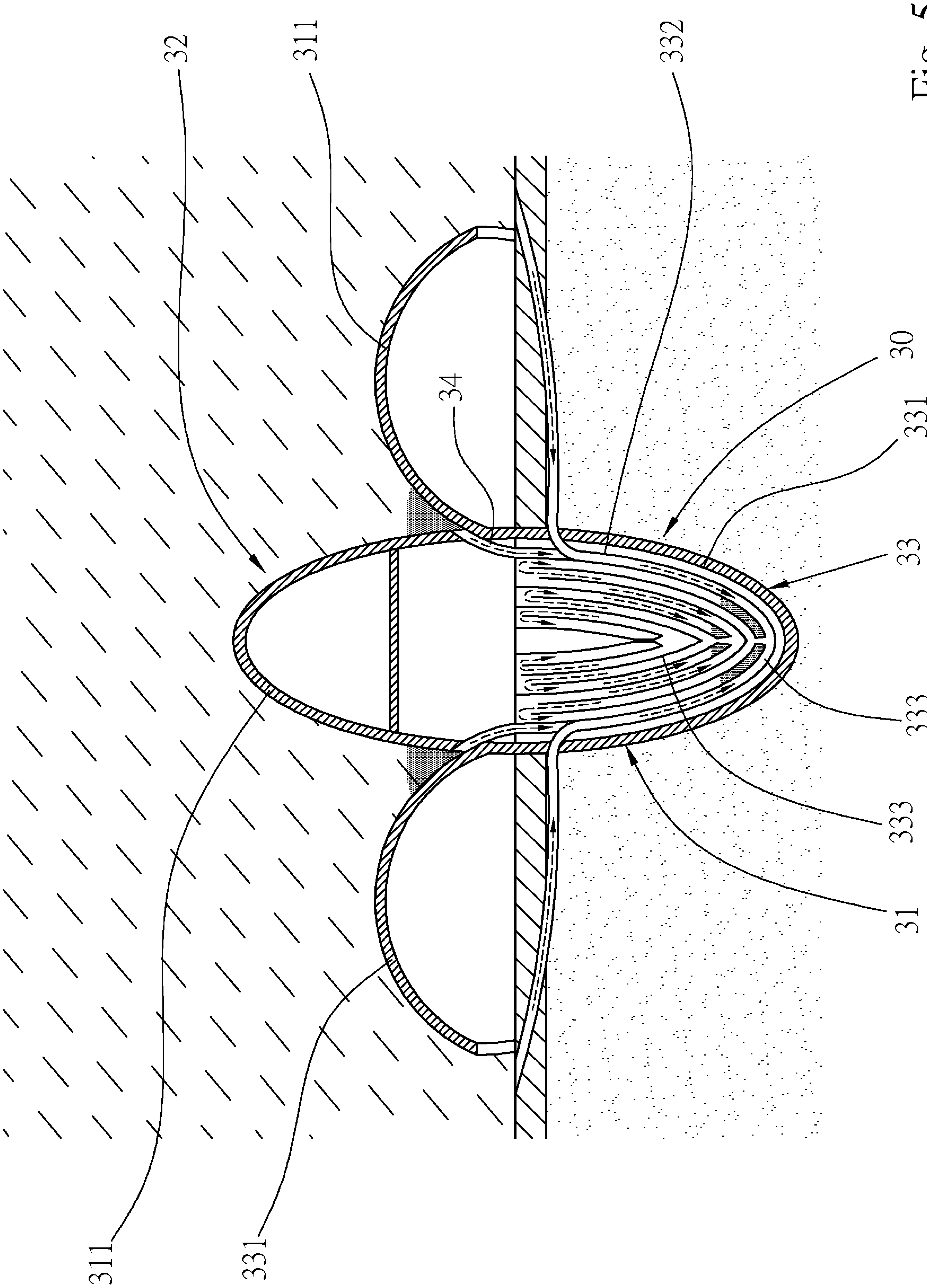

Fig. 5A

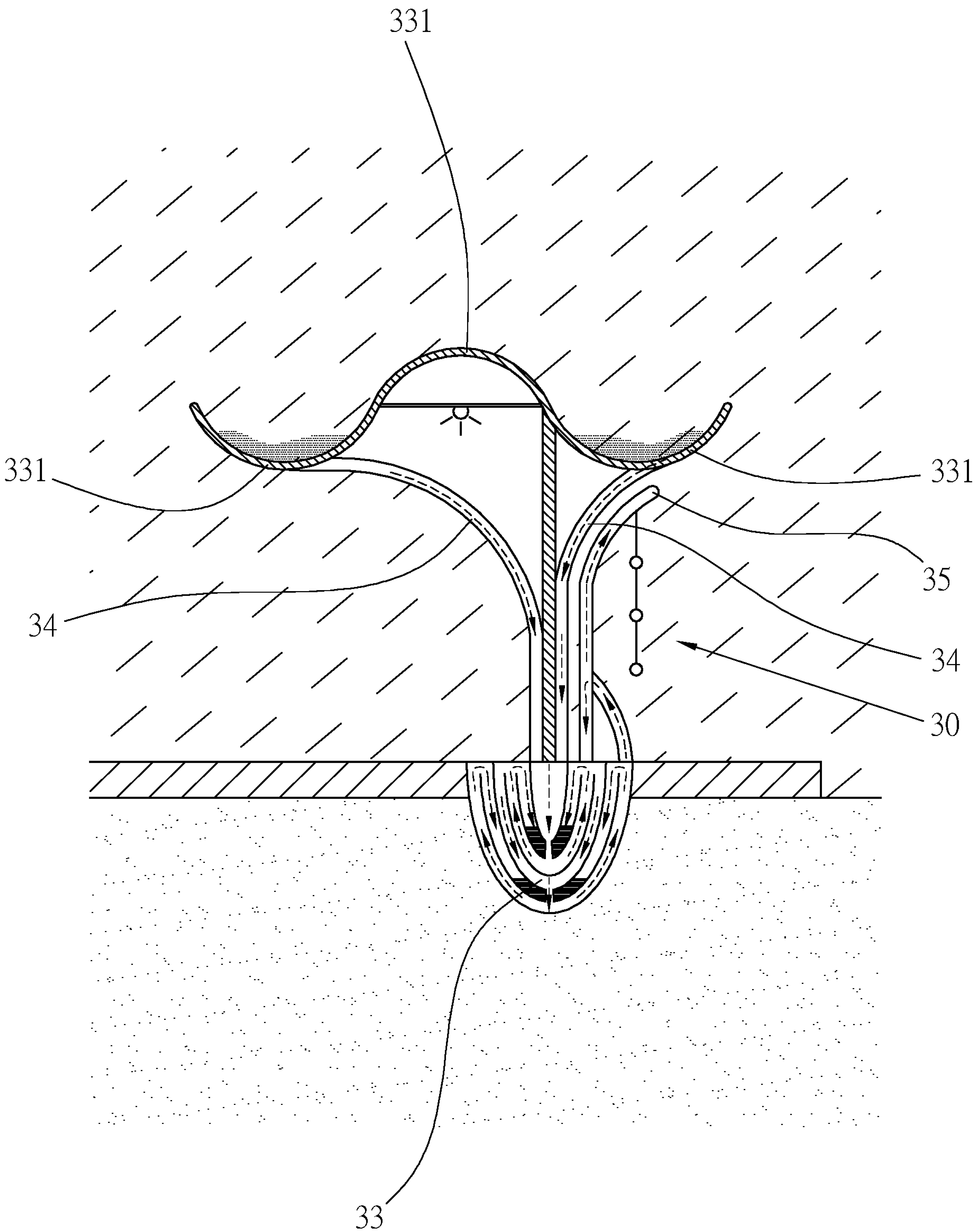

Fig. 5B

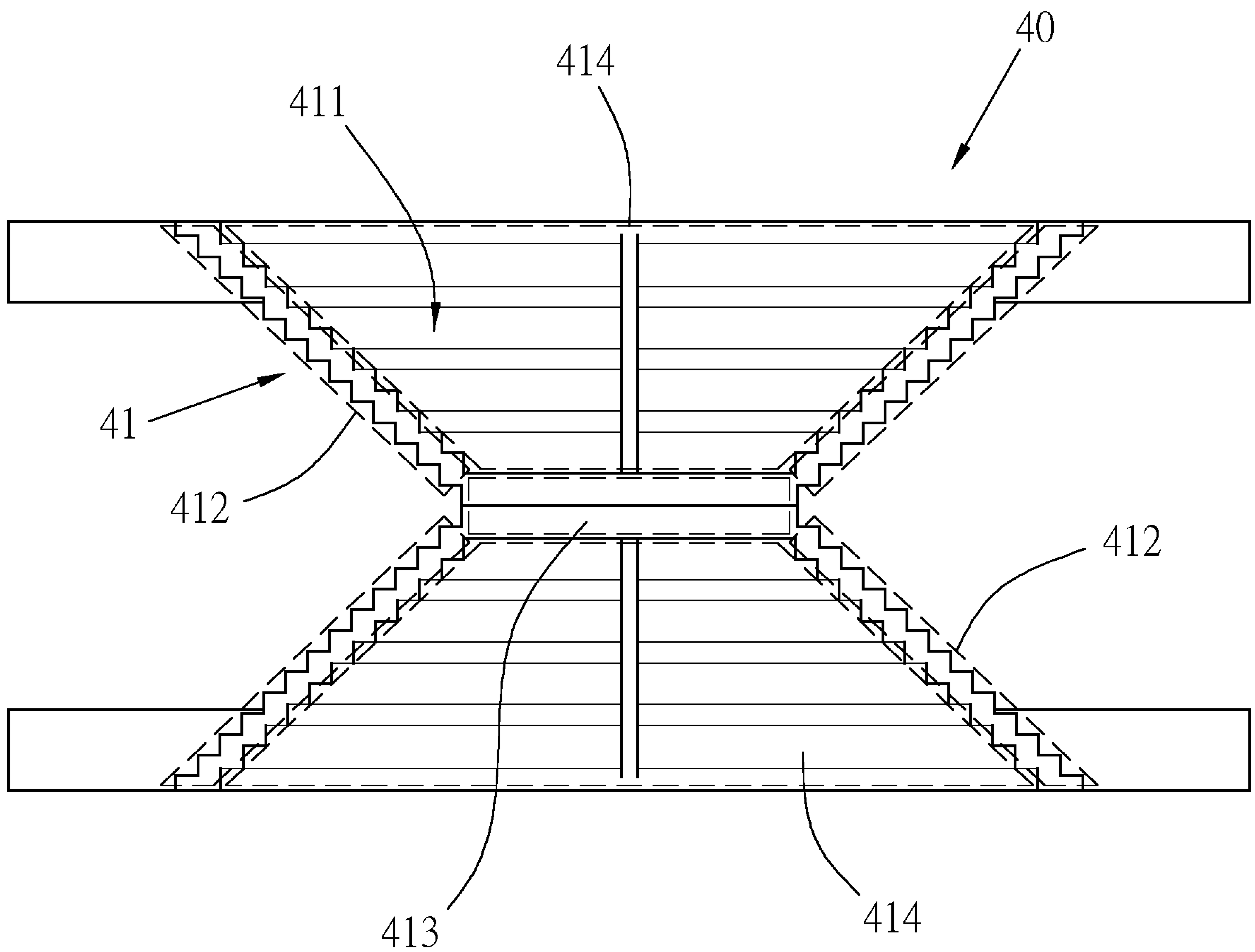

Fig. 6A

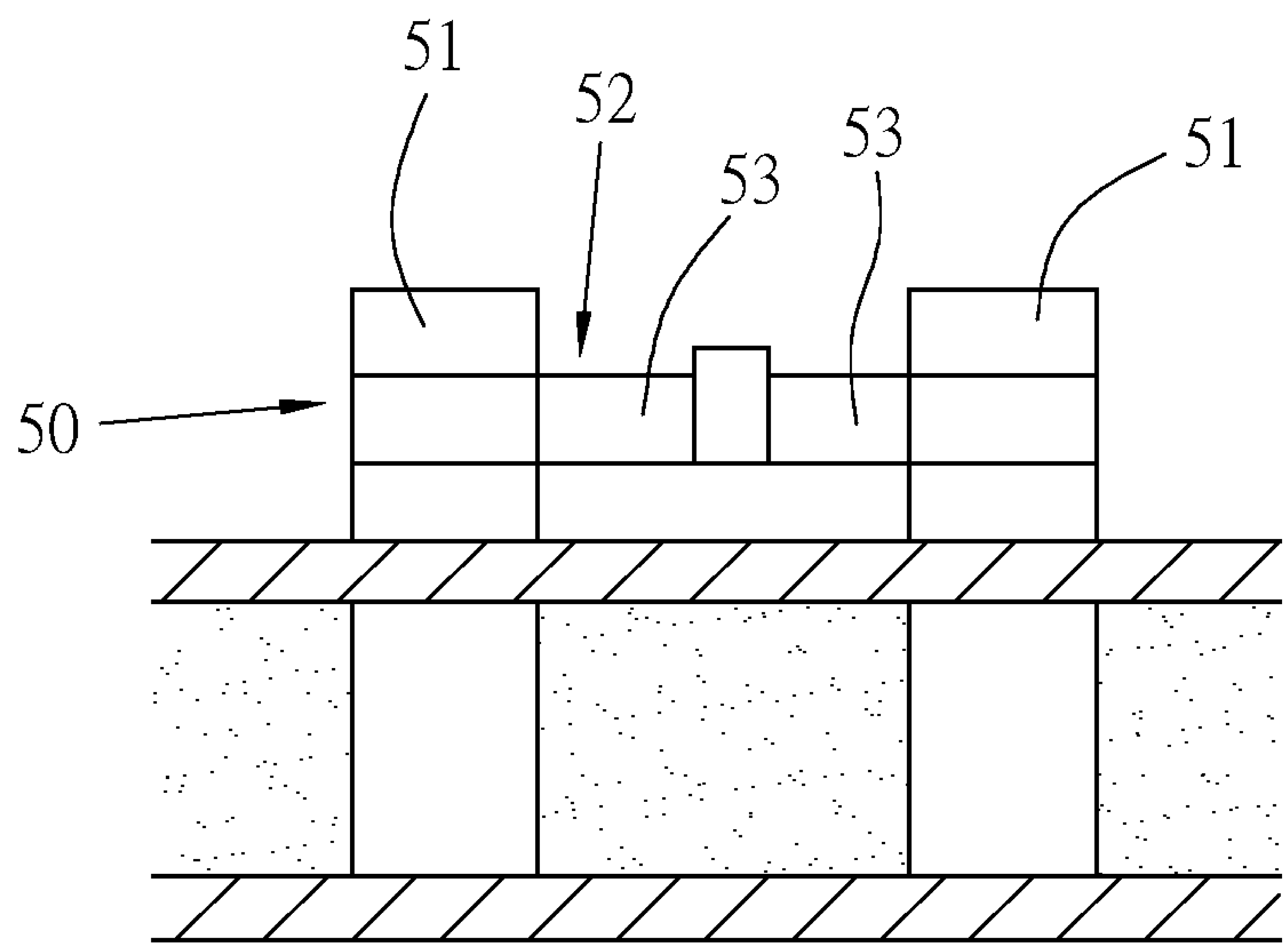

Fig. 7

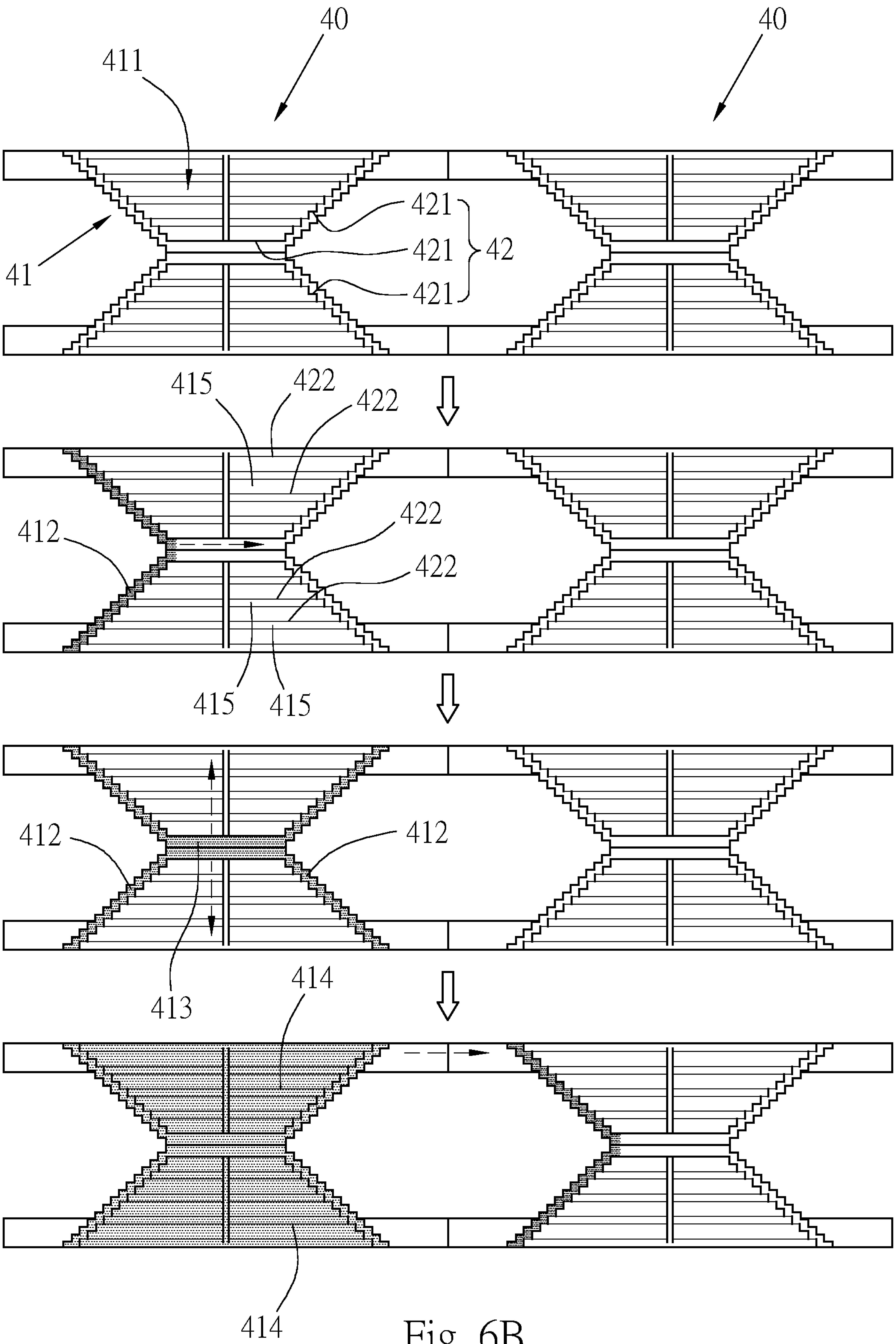
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Fig. 6B

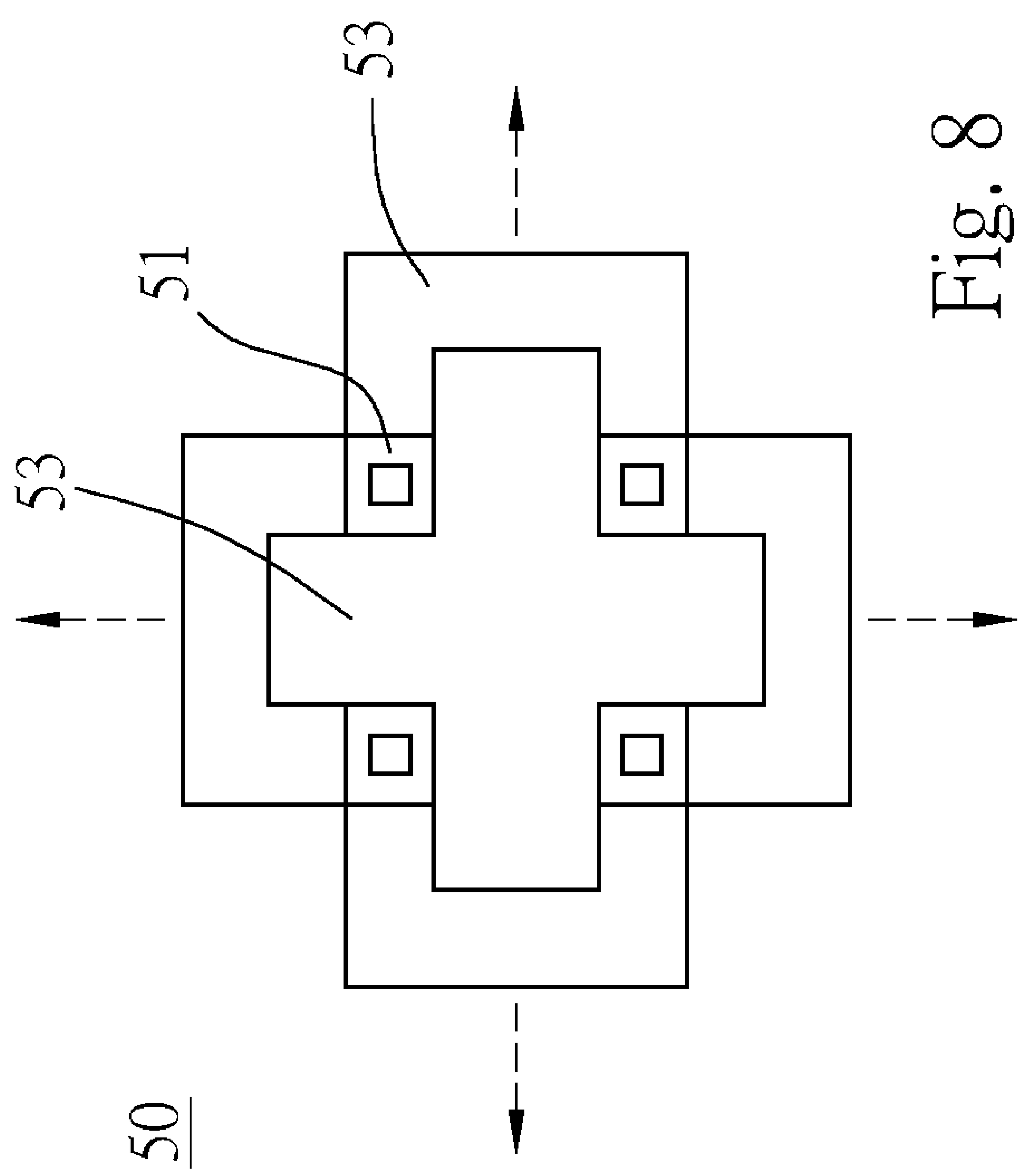

Fig. 8

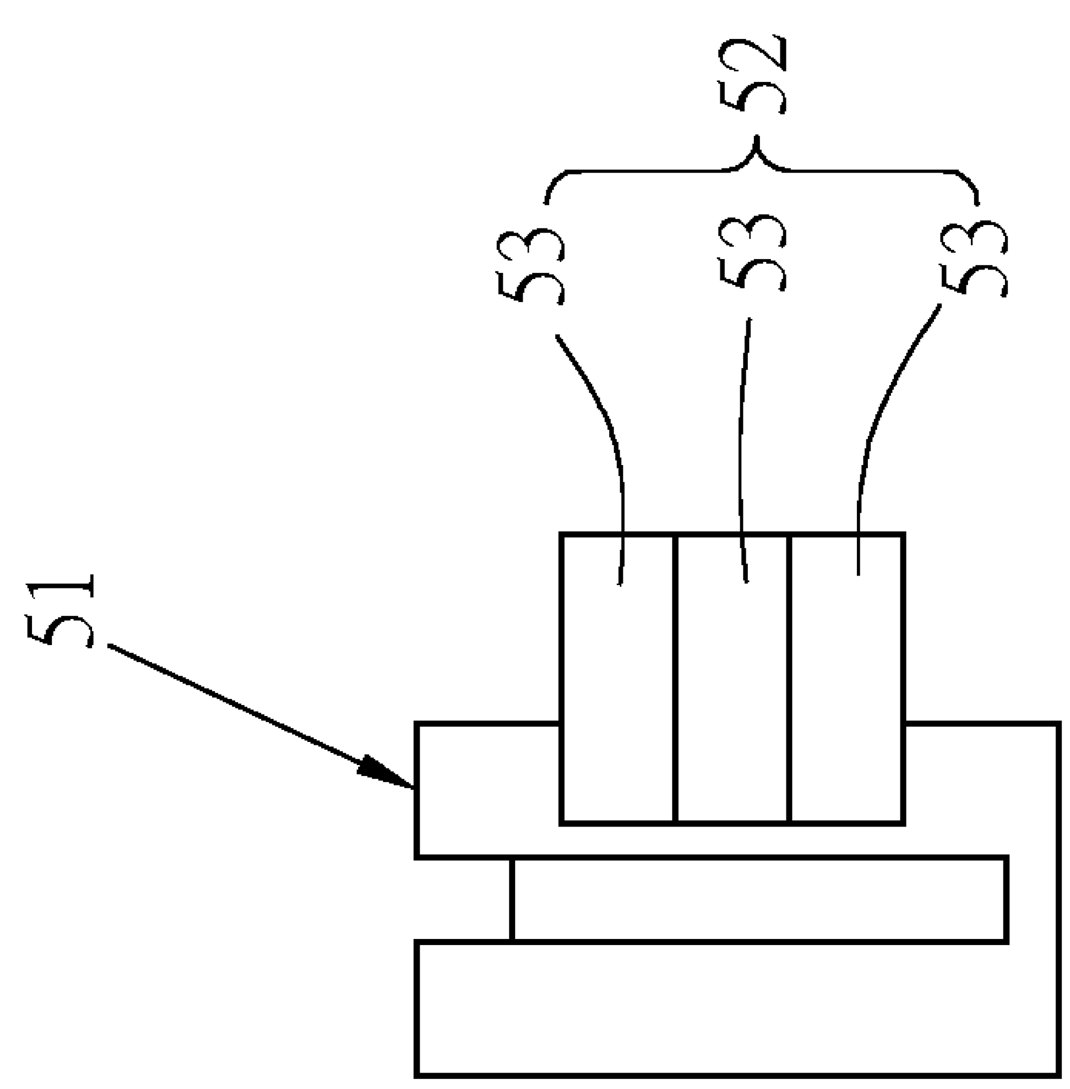

Fig. 9

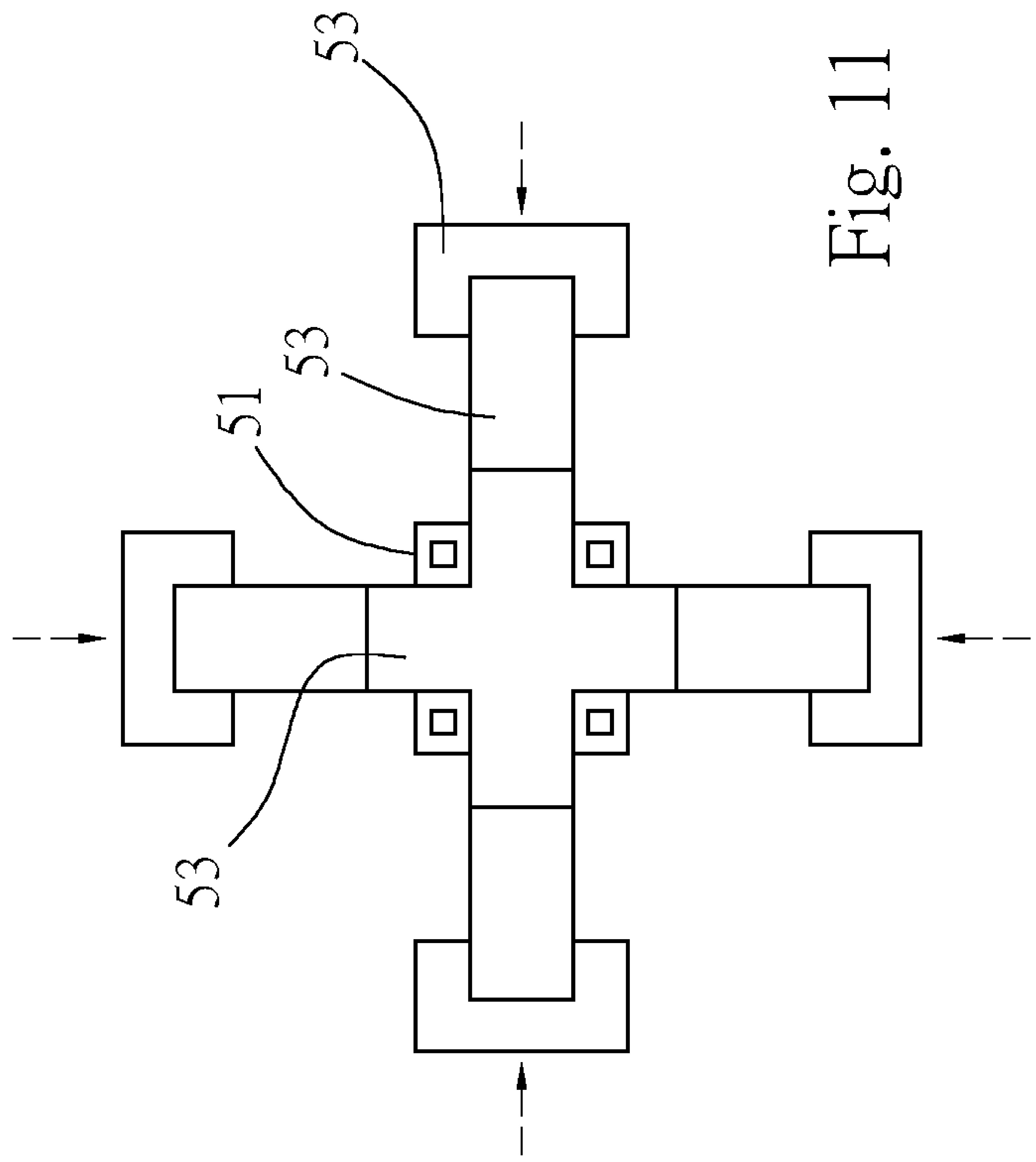

Fig. 11

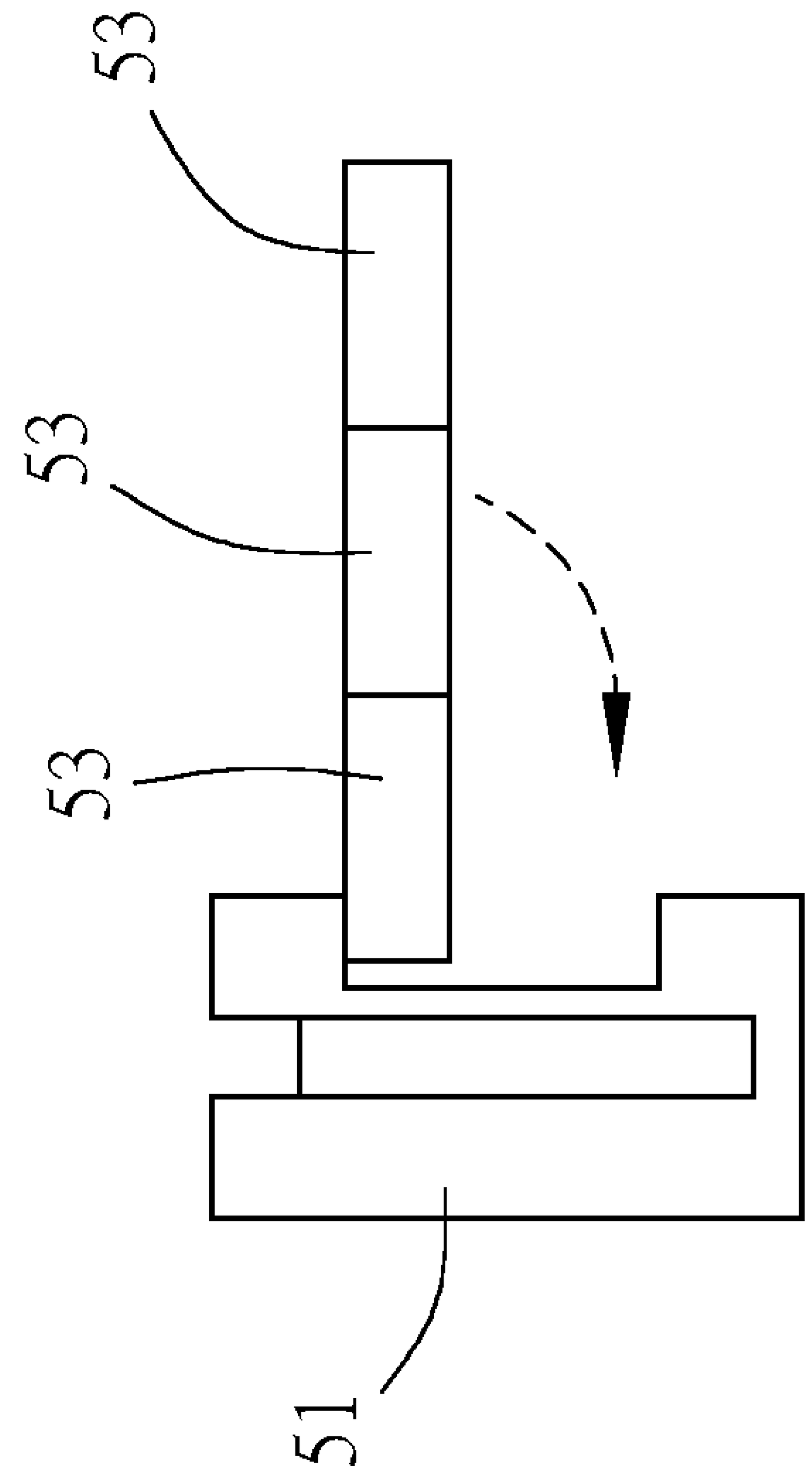

Fig. 12

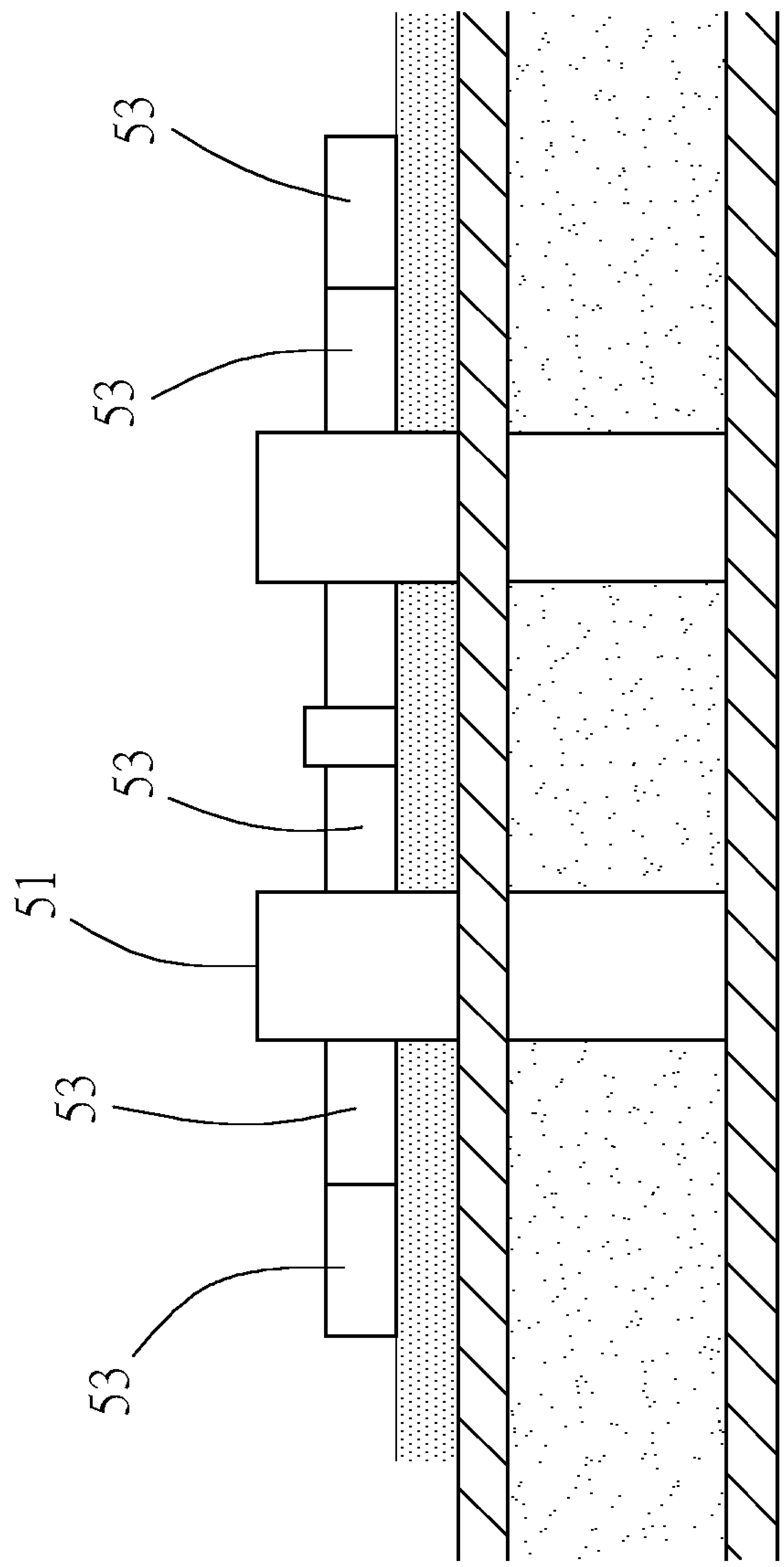

Fig. 10

TAILORING YEARN SYSTEM HAVING A TAILORING MECHANISM

BACKGROUND OF THE INVENTION

Field of Invention

The invention is related to a technology for providing resilience to flood, more particularly to a triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20].

Related Art

Seasonal hurricanes, or more frequent extreme climate, often bring excess precipitation, which, if not drained in time, can accumulate and converge into a flood over time. In the construction and layout of city, there is usually not much reserved space for the free flow or circulation of catastrophic heavy rain or flood, which makes it more difficult to effectively drain a sudden flood.

Moreover, if the city is located in the coastal area, melting of icebergs due to global warming will raise sea levels, which may lead to flooding in low-lying areas of the city, severe erosion of beaches and sea cliffs, and intrusion of sea salt into aquifers.

In addition, flood can carry plastic waste and even highly polluting or dangerous chemical products into the sea, causing rapid algae growth, ocean pollution and acidification. And, flood will also take away a large amount of soil on the earth's surface, making the land barren, destroying vegetation, and deteriorating ecology, which will eventually lead to severe desertification.

It is particularly pointed out that since Saint Christopher and Nevis is located in the Caribbean Sea, based on its geographical location and hydrological characteristics, it is necessary to deal with the above-mentioned problems with corresponding measures, providing regular and sustained water resources management strategies will help fundamentally mitigate or reduce the occurrence of disasters.

In addition, with the development of social economy and the increase of human development and engineering activities, the natural ecological environment and biodiversity have been changed, especially the replenishment rate of groundwater has dropped significantly, and groundwater resources are also over-exploited and polluted, resulting in rapid decreasing of available groundwater.

SUMMARY OF THE INVENTION

Therefore, a main object of the invention is to provide a triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20] capable of guiding a travel direction of a flood in order to mitigate or reduce disasters caused by the flood.

In order to achieve the above-mentioned object, the triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20] provided by the invention has a tailoring mechanism, the tailoring mechanism comprises a first unit and a second unit, wherein the first unit has an arc-shaped first arcuate portion, the second unit has an arc-shaped second arcuate portion, the first unit and the second unit stagger each other with concave arcuate surfaces facing toward opposite directions by a center axis of curvature of the first arcuate portion parallelling to a center axis of curvature of the second arcuate portion to cause an arcuate end of the first arcuate portion locate between two

arcuate ends of the second arcuate portion and separated from the concave arcuate surface of the second arcuate portion by a first distance, and to cause an arcuate end of the second arcuate portion locate between two arcuate ends of the first arcuate portion and separated from the first arcuate portion by a second distance, thereby the first arcuate portion and the second arcuate portion jointly define a curved channel between each other.

In one embodiment, the first arcuate portion has a plurality of first columns, and the first columns are spaced apart from one another and arranged in an arcuate shape of the first arcuate portion; the second arcuate portion has a plurality of second columns, and the second columns are spaced apart from one another and arranged in an arcuate shape of the second arcuate portion.

Wherein, each of the first columns and each of the second columns are respectively quadrilateral in cross-sectional shape in a radial direction, preferably trapezoidal.

On the other hand, the triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20] provided by the invention further has a flood guiding array, and the flood guiding array comprises a plurality of the tailoring mechanisms.

In one embodiment, the tailoring mechanisms are equidistantly disposed with a virtual center point as a center within a predetermined radius range with the center point as the center, and one end of the curved channel of each of the tailoring mechanisms is radially close to the center point, and another end is away from the center point.

In one embodiment, a quantity of the tailoring mechanism is three.

Further, a minimum distance between one end of any two of the adjacent second arcuate portions of the tailoring mechanisms close to the center point is a third distance.

In one embodiment, two ends of the curved channel are respectively defined as an inflow end and an outflow end, the tailoring mechanisms are arranged one by one sequentially, and between any two of the adjacent tailoring mechanisms, the outflow end of the tailoring mechanism preceding sequentially is connected in series with the inflow end of the subsequent tailoring mechanism.

In one embodiment, between any two of the adjacent tailoring mechanisms, one end of the second arcuate portion of the tailoring mechanism preceding sequentially located at another end of an arcuate shape of the outflow end is located in the curved channel of the subsequent tailoring mechanism, and one end of the first arcuate portion of the subsequent tailoring mechanism located at another end of an arcuate shape of the inflow end is located in the curved channel of the tailoring mechanism preceding sequentially, and the curved channel of the tailoring mechanism preceding sequentially and the curved channel of the subsequent tailoring mechanism are partially overlapped and communicated with each other.

In one embodiment, a minimum distance between any two of the adjacent tailoring mechanisms is a fourth distance.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a schematic diagram of a first embodiment of the invention.

FIG. **1**A is a schematic diagram of another embodying mode of an arcuate portion according to the first embodiment of the invention.

FIG. **2** is a schematic diagram of a second embodiment of the invention.

FIG. **3** is a schematic diagram of a third embodiment of the invention.

FIG. **4** is a schematic diagram of a fourth embodiment of the invention.

FIGS. **5**A and **5**B are schematic diagrams of different embodying modes of a rainwater collecting mechanism

FIG. **6**A is a schematic diagram of a bridge water storage mechanism.

FIG. **6**B is a schematic diagram related to FIG. **6**A in a use situation, and showing two sets of the bridge water storage mechanisms.

FIG. **7** is a schematic view of a road space tailoring mechanism, and showing a mode in a storage position.

FIG. **8** is a partial top view of FIG. **7**.

FIG. **9** is a partial side view of FIG. **7**.

FIG. **10** is a schematic view of the road space tailoring mechanism, and showing a mode in an unfolded position.

FIG. **11** is a partial top view of FIG. **10**.

FIG. **12** is a partial side view of FIG. **11**.

DETAILED DESCRIPTION OF THE INVENTION

Please refer to FIG. **1** for a triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20] disclosed in a first embodiment of the invention mainly comprising a tailoring mechanism **10** for disposing in a coast or a river bank and capable of providing resilience to a flood by guiding a travel direction, increasing a flow path length, and prolonging a water flow time of the flood, thereby slowing down a flow rate and dispersing a flow volume in order to reduce a severity of the flood.

Wherein, identification of biological functions and bionic design and development of biological structures for the tailoring mechanism **10** was first carried out and completed independently by Professor CHIU Kuo-Wei from the Department of Architecture of Tunghai University, and then was delivered to graduate students to instruct them to carry out the structural design test and functional design confirmation of the triadic recurve in-situ flood navigation array of model TRINITY—D20™. In particular, the design idea of the tailoring mechanism **10** of the invention is derived from guard cells with elastic inner walls of different thicknesses at different positions expanding unevenly due to the presence of air, and forming an osmotic pressure (vapor pressure difference) between the two for gas exchange.

Specifically, the tailoring mechanism **10** comprises a first unit **11** and a second unit **14**, wherein the first unit **11** has an arc-shaped first arcuate portion **12**, and two arcuate ends of the first arcuate portion **12** are respectively defined as a first end **121** and a second end **122**. In this embodiment, the first arcuate portion **12** has a plurality of first columns **13**, and the first columns **13** are spaced apart from one another and arranged in an arcuate shape of the first arcuate portion **12**.

The second unit **14** has an arc-shaped second arcuate portion **15**, and two arcuate ends of the second arcuate portion **15** are respectively defined as a first end **151** and a second end **152**. In this embodiment, the second arcuate portion **15** has a plurality of second columns **16**, and the second columns **16** are spaced apart from one another and arranged in an arcuate shape of the second arcuate portion **15**.

Wherein, each of the first columns **13** and each of the second columns **16** are respectively quadrilateral in cross-sectional shape in a radial direction, preferably trapezoidal. In addition, length, width, height, structural shape, quantity, and positional relationship of the columns can be set according to a size of a field disposed with the tailoring mechanism **10** or a predicted flood water level. For example, as shown in FIG. **1**A, the columns comprised in each of the arcuate portions are arranged in an array, the array can be N columns and M rows, N and M are natural numbers, and height, width (length) of the columns, and density of arrangement of the columns are gradually decreasing from the outside to the inside toward a center of curvature of the arcuate shape, so that a fluid flowing through the columns can be guided to a specific direction.

In addition, since the columns comprised in each of the arcuate portions are spaced apart from one another, each of the arcuate portions has a plurality of gaps, when the fluid flows through each of the arcuate portions, the fluid can be vented out through the gaps to facilitate evacuation of the fluid.

Further, a large number of hydrophilous plants can further be planted on a land disposed with the tailoring mechanism **10**. In addition to increasing a moisture content of the soil, the plants can also be used to provide shade from the sun so that the soil can be maintained at an appropriate temperature to reduce evapotranspiration in the soil.

Furthermore, in other embodiments, the tailoring mechanism **10** can be disposed in an intertidal zone or a neritic zone to divide the waters into a plurality of blocks, which can not only slow down coastal erosion, but also create habitats for fish or marine life.

In addition, curvature, arc length, thickness and shape of the first arcuate portion **12** and the second arcuate portion **15** can be adjusted according to actual needs, such as the first arcuate portion **12** and the second arcuate portion **15** in this embodiment are respectively C-shaped, and in other embodying modes, the first arcuate portion **12** or the second arcuate portion **15** can be shaped with a thick middle part, and two gradually thinned sides extending from the middle part.

As shown in FIG. **1**, the first unit **11** and the second unit **14** stagger each other with concave arcuate surfaces facing toward opposite directions by a center axis of curvature of the first arcuate portion **12** parallelling to a center axis of curvature of the second arcuate portion **15** to cause the second end **122** of the first arcuate portion **12** locate between two arcuate ends (i.e., the first end **151** and the second end **152**) of the second arcuate portion **15**, and the second end **122** of the first arcuate portion **12** separated from the concave arcuate surface of the second arcuate portion **15** by a first distance D**1**, and to cause the first end **151** of the second arcuate portion **15** locate between two arcuate ends (i.e., the first end **121** and the second end **122**) of the first arcuate portion **12**, a maximum distance between the first end **151** of the second arcuate portion **15** and the concave arcuate surface of the first arcuate portion **12** adjacent to the first end **121** being a second distance D**2**, and a maximum distance between the first end **151** of the second arcuate portion **15** and the concave arcuate surface of the first arcuate portion **12** adjacent to the second end **122** being separated by a holdup distance D**5**. Finally, the first arcuate portion **12** and the second arcuate portion **15** jointly define a curved channel **17** between each other, and two ends of the curved channel **17** are respectively defined as an inflow end **171** and an outflow end **172**.

Wherein, ratio or size relationship between the first distance D**1**, the second distance D**2** and the holdup distance D**5** can be adjusted according to actual needs, sizes of the distances can respectively determine widths of parts of the curved channel **17** corresponding to the distances. In particular, the second distance D**2** can define a width of the inflow end **171** to determine an inflow flow rate. The holdup distance D**5** can define a size of a holdup area in the curved channel **17** formed by the arcuate portions intersecting with each other to determine a vortex size formed by an external fluid flowing through the holdup area.

In addition, on the premise that curvature and size of each of the arcuate portions are the same, if a width of the inflow end **171** is equal to a width of the outflow end **172**, the tailoring mechanism **10** can be defined as a symmetrical structure.

According to calculation and simulation results, the first distance D**1** is between 0.1 in and 0.5 in, and the second distance D**2** is 0.5 in.

With the composition of the above components, the main implementation steps of the first embodiment of the invention are as follows:

Firstly, an external fluid enters the curved channel **17** through the inflow end **171**. At this time, a fluid pressure is high and its flow rate is relatively high. When there is another static fluid remaining in the curved channel **17**, the external fluid will converge with the static fluid and flow together toward an interior of the curved channel **17**. In this embodiment, the external fluid is a liquid mainly composed of water.

Then, when the external fluid flows through a connecting position between the first arcuate portion **12** and the second arcuate portion **15**, since a bending direction of the concave arcuate surface of the second arcuate portion **15** is opposite to a bending direction of the concave arcuate surface of the first arcuate portion **12**, a pressure generated by the external fluid concentrating on the connecting position will cause an implosion, and a large proportion of the external fluid will be vented out through the gaps between the columns, and the pressure will drop sharply.

Finally, the remaining external fluid flows along the curvature of the second arcuate portion **15**, and its flow velocity gradually becomes slower, and slowly and calmly flows out to a designated area from the outflow end **172**, or the remaining external fluid remains statically in the curved channel **17**.

Please refer to a second embodiment of the invention shown in FIG. **2**, a main difference between the second embodiment and the first embodiment is that the triadic recurve implosion flood navigation for in-situ tailoring yearn system—[TRINITY-D20] in this embodiment has a flood guiding array **20**A, the flood guiding array **20**A comprises three of the tailoring mechanisms **10**A, wherein the tailoring mechanisms **10**A are radially equidistantly disposed with a virtual center point as a center within a predetermined radius range with the center point as the center, and the outflow end **172**A of the curved channel **17**A of each of the tailoring mechanisms **10**A is close to the center point, and the inflow end **171**A is away from the center point.

In addition, a minimum distance between the two adjacent second ends **152**A of the second arcuate portions **15**A of the tailoring mechanisms **10**A is a third distance D**3**, preferably, the third distance D**3** is 0.5 in, so that there is an appropriate buffer space between the tailoring mechanisms **10**A to achieve a better flow effect.

As shown in FIG. **3**, a main difference between a third embodiment of the invention and the second embodiment is that the flood guiding array **20**B comprises a plurality of the tailoring mechanisms **10**B, and the tailoring mechanisms **10**B are arranged one by one in sequence, wherein between any two of the adjacent tailoring mechanisms **10**B, the outflow end **172**B of the tailoring mechanism **10**B preceding sequentially is connected in series with the inflow end **171**B of the subsequent tailoring mechanism **10**B.

Specifically, between any two of the adjacent tailoring mechanisms **10**B, one end of the second arcuate portion **15**B of the tailoring mechanism **10**B preceding sequentially located at another end (i.e., the second end **152**B) of an arcuate shape of the outflow end **172**B is located in the curved channel **17**B of the subsequent tailoring mechanism **10**B, and one end of the first arcuate portion **12**B of the subsequent tailoring mechanism **10**B located at another end (i.e., the first end **121**B) of an arcuate shape of the inflow end **171**B is located in the curved channel **17**B of the tailoring mechanism **10**B preceding sequentially, and the curved channel **17**B of the tailoring mechanism **10**B preceding sequentially and the curved channel **17**B of the subsequent tailoring mechanism **10**B are partially overlapped and communicated with each other. Accordingly, the external fluid can be caused to flow in the curved channels **17**B of the tailoring mechanisms **10**B that are arranged one by one in order to gradually slow down its flow rate.

As shown in FIG. **4**, a main difference between a fourth embodiment of the invention and the third embodiment is that between any two of the adjacent tailoring mechanisms **10**C, a minimum distance between the second end **152**C of the second arcuate portion **15**C of the tailoring mechanism **10**C preceding sequentially and the first end **121**C of the first arcuate portion **127**C of the subsequent tailoring mechanism **10**C is a fourth distance D**4** in order to achieve a better flow effect. In this embodiment, the fourth distance D**4** is 0.5 in.

In addition, the invention can also be used in conjunction with another water conservancy facility to be capable of managing water resources or utilizing water conservancy under different climatic conditions or states. Wherein the water conservancy facility can be, but is not limited to, a rainwater collecting mechanism **30**, a bridge water storage mechanism **40** or a road space tailoring mechanism **50**, and the structural features of these mechanisms are described in detail below.

As shown in FIG. **5**A and FIG. **5**B, the rainwater collecting mechanism **30** has a main body **31**, a collecting part **32** and a water storage part **33**, wherein the main body **31** is in the form of a building, a part of which is buried under the ground, and another part is constructed on the ground. The collecting part **32** is disposed at a top of the building, so that the collecting part **32** is away from the ground, and the water storage part **33** is disposed inside the building, preferably, disposing in a basement of the building, or in a part below the ground.

Specifically, the collecting part **32** has a plurality of arcuate plates **311**, each of the plates **311** is a modular nesting component, which can be assembled and combined with one another arbitrarily. For example, any two of the plates **311** are assembled with each other with convex arcuate surfaces facing outward (as shown in FIG. **5**A), or connected with each other with the convex arcuate surface of one of the plates **311** facing outward and with a concave arcuate surface of the other plate **311** facing outward (as shown in FIG. **5**B) to be used for guiding drainage or gathering rainwater respectively, and at the same time, the arcuate structures are capable of increasing a surface area for collecting rainwater.

Furthermore, the collecting part **32** and the water storage part **33** are connected with each other through a plurality of pipelines **34**, so that the rainwater collected by the collecting part **32** can be distributed and stored in the water storage part **33** through the pipelines **34**.

The water storage part **33** has a tank **331**, inside the tank **331** is divided into a plurality of storage spaces **333** communicating with one another by a plurality of partitions **332**, and the storage spaces **333** are arranged in the tank **331** in sequence from the outside to the inside. The storage spaces **333** receive the rainwater collected by the collecting part **32** through the pipelines **34** respectively, and the storage space **333** located at the outermost periphery receives the rainwater first, when that storage space **333** is full, the rainwater will overflow to the next storage space **333**. Accordingly, the rainwater collecting mechanism **30** can be used as a water storage facility to improve the problem of water resources shortage.

In addition, the water storage part **33** is further connected with a drain pipe **35**, when the storage spaces **333** are filled with the rainwater to the fullest, or when a water level is about to be full, the drain pipe **35** can be used to drain excess rainwater.

In particular, the design idea of the rainwater collecting mechanism **30** is derived from the shape of the leaves of pineapple.

As shown in FIG. **6**A and FIG. **6**B, the bridge water storage mechanism **40** has a column body **41** and a partition part **42**, wherein the column body **41** is used for supporting bridges and road surface, and its configuration is designed according to a supporting capacity. In this embodiment, the column body **41** is in the shape of a hollow hourglass and has an inner space **411**.

The partition part **42** has a plurality of first partitions **421** and a plurality of second partitions **422**, wherein each of the first partitions **421** is respectively disposed in the column body **41** to divide the inner space **411** along a cross-section of the column body **41** in an axial direction into two outer ring areas **412**, a connecting area **413** and two central areas **414**. Each of the outer ring areas **412** is located at a position adjacent to peripheral walls on two sides of the column body **41**, the connecting area **413** is spanned inside the column body **41**, two ends thereof are respectively connected to each of the outer ring areas **412**, and the connecting area **413** is located between the two central areas **414**.

Furthermore, the second partitions **422** are separately disposed in each of the central areas **414**, so that each of the central areas **414** is separated by a plurality of pipes **415** that communicate with one another and are parallel to one another. Wherein each of the pipes **415** can be designed with different widths and lengths.

Accordingly, as shown in FIG. **6**B, two sets of the bridge water storage mechanisms **40** are juxtaposed. Wherein, when an external water body enters the bridge water storage mechanism **40**, it is first filled in one of the two outer ring areas **412**, after one of the two outer ring areas **412** is filled with the external water body to the fullest, the external water body flows into the other outer ring area **412** through the connecting area **413**. Then, the external water body flows into the central areas **414** from the connecting area **413** respectively, and the external water body is gradually accumulated layer by layer by using the pipes **415** stacked on one another in each of the central areas **414** to achieve an object of water resources distribution and storage.

Finally, when one set of the bridge water storage mechanisms **40** is full of water, the water can flow into the other set of the bridge water storage mechanism **40** to accumulate and store more water resources.

In particular, the design idea of the bridge water storage mechanism **40** is derived from the xylem used to transport water in trees, wherein, when the tree is upright and functioning normally, the xylem is used to transport nutrients and water absorbed by the roots; however, when the tree is brought down and laid on its side, excess water is trapped in the trunk and builds up gradually.

As shown in FIG. **7** to FIG. **12**, the road space tailoring mechanism **50** is installed on a seafront or a coast, and has a body **51** and a road module **52**, wherein the body **51** is in the shape of a column for erecting the road module **52**, and the road module **52** comprises a plurality of plates **53**, according to an assembled mode of the plates **53**, the assembled mode is divided into a storage position (as shown in FIGS. **7** to FIG. **9**) and an unfolded position (as shown in FIG. **10** to FIG. **12**).

When a tide or a flood exceeds a predetermined capacity, the road module **52** will be dismantled, so that the plates **53** are positioned in the unfolded position to provide more space for a water body to flow under the road module **52**; after the tide or the flood has withdrawn, the plates **53** will be reassembled to position in the storage position.

In particular, the design idea of the road space tailoring mechanism **50** is derived from the principle of water regulation at the roots of trees during the dry season and the wet season.

The above-mentioned embodiments are merely used to illustrate the technical ideas and features of the invention, with an object to enable any person having ordinary skill in the art to understand the technical content of the invention and implement it accordingly, the embodiments are not intended to limit the Claims of the invention, and all other equivalent changes and modifications completed based on the technical means disclosed in the invention should be included in the Claims covered by the invention.

What is claimed is:

1. A tailoring yearn system having a tailoring mechanism, the tailoring mechanism comprising:

a first unit having an arc-shaped first arcuate portion; and

a second unit having an arc-shaped second arcuate portion;

wherein the first unit and the second unit stagger each other with concave arcuate surfaces facing toward opposite directions by a center axis of curvature of the first arcuate portion parallelling to a center axis of curvature of the second arcuate portion to cause an arcuate end of the first arcuate portion locate between two arcuate ends of the second arcuate portion and separated from the concave arcuate surface of the second arcuate portion by a first distance, and to cause an arcuate end of the second arcuate portion locate between two arcuate ends of the first arcuate portion and separated from the first arcuate portion by a second distance, thereby the first arcuate portion and the second arcuate portion jointly define a curved channel between each other;

wherein the first arcuate portion has a plurality of first columns, and the first columns are spaced apart from one another and arranged in an arcuate shape of the first arcuate portion; the second arcuate portion has a plurality of second columns, and the second columns are spaced apart from one another and arranged in an arcuate shape of the second arcuate portion.

2. The tailoring yearn system as claimed in claim **1**, wherein each of the first columns and each of the second columns are respectively quadrilateral in cross-sectional shape in a radial direction.

3. The tailoring yearn system as claimed in claim **2**, wherein each of the first columns and each of the second columns are respectively trapezoidal in cross-sectional shape in a radial direction.

4. A tailoring yearn system, having a flood guiding array comprising the tailoring mechanism as claimed in claims **3**.

5. The tailoring yearn system as claimed in claim **4**, wherein the tailoring mechanisms are radially equidistantly disposed with a virtual center point as a center within a predetermined radius range with the center point as the center, and one end of the curved channel of each of the tailoring mechanisms is close to the center point, and another end is away from the center point.

6. The tailoring yearn system as claimed in claim **5**, wherein a quantity of the tailoring mechanism is three.

7. The tailoring yearn system as claimed in claim **6**, wherein a minimum distance between one end of any two of the adjacent second arcuate portions of the tailoring mechanisms close to the center point is a third distance.

8. The tailoring yearn system as claimed in claim **7**, wherein one end of the curved channel close to the center point is defined as an inflow end, and another end of the curved channel away from the center point is defined as an outflow end.

9. The tailoring yearn system as claimed in claim **4**, wherein two ends of the curved channel are respectively defined as an inflow end and an outflow end, the tailoring mechanisms are arranged one by one sequentially, and between any two of the adjacent tailoring mechanisms, the outflow end of the tailoring mechanism preceding sequentially is connected in series with the inflow end of the subsequent tailoring mechanism.

10. The tailoring yearn system as claimed in claim **9**, wherein between any two of the adjacent tailoring mechanisms, one end of the second arcuate portion of the tailoring mechanism preceding sequentially located at another end of an arcuate shape of the outflow end is located in the inflow end of the curved channel of the subsequent tailoring mechanism, and one end of the first arcuate portion of the subsequent tailoring mechanism located at another end of an arcuate shape of the inflow end is located in the outflow end of the curved channel of the tailoring mechanism preceding sequentially, and the curved channel of the tailoring mechanism preceding sequentially and the curved channel of the subsequent tailoring mechanism are partially overlapped and communicated with each other.

11. The tailoring yearn system as claimed in claim **9**, wherein a minimum distance between any two of the adjacent tailoring mechanisms is a fourth distance.

12. A tailoring yearn system, having a flood guiding array comprising the tailoring mechanism as claimed in claims **2**.

13. The tailoring yearn system as claimed in claim **12**, wherein the tailoring mechanisms are radially equidistantly disposed with a virtual center point as a center within a predetermined radius range with the center point as the center, and one end of the curved channel of each of the tailoring mechanisms is close to the center point, and another end is away from the center point.

14. The tailoring yearn system as claimed in claim **13**, wherein a quantity of the tailoring mechanism is three.

15. The tailoring yearn system as claimed in claim **14**, wherein a minimum distance between one end of any two of the adjacent second arcuate portions of the tailoring mechanisms close to the center point is a third distance.

16. The tailoring yearn system as claimed in claim **15**, wherein one end of the curved channel close to the center point is defined as an inflow end, and another end of the curved channel away from the center point is defined as an outflow end.

17. The tailoring yearn system as claimed in claim **12**, wherein two ends of the curved channel are respectively defined as an inflow end and an outflow end, the tailoring mechanisms are arranged one by one sequentially, and between any two of the adjacent tailoring mechanisms, the outflow end of the tailoring mechanism preceding sequentially is connected in series with the inflow end of the subsequent tailoring mechanism.

18. The tailoring yearn system as claimed in claim **17**, wherein between any two of the adjacent tailoring mechanisms, one end of the second arcuate portion of the tailoring mechanism preceding sequentially located at another end of an arcuate shape of the outflow end is located in the inflow end of the curved channel of the subsequent tailoring mechanism, and one end of the first arcuate portion of the subsequent tailoring mechanism located at another end of an arcuate shape of the inflow end is located in the outflow end of the curved channel of the tailoring mechanism preceding sequentially, and the curved channel of the tailoring mechanism preceding sequentially and the curved channel of the subsequent tailoring mechanism are partially overlapped and communicated with each other.

19. The tailoring yearn system as claimed in claim **17**, wherein a minimum distance between any two of the adjacent tailoring mechanisms is a fourth distance.

20. A tailoring yearn system, having a flood guiding array comprising the tailoring mechanism as claimed in claims **1**.

21. The tailoring yearn system as claimed in claim **20**, wherein the tailoring mechanisms are radially equidistantly disposed with a virtual center point as a center within a predetermined radius range with the center point as the center, and one end of the curved channel of each of the tailoring mechanisms is close to the center point, and another end is away from the center point.

22. The tailoring yearn system as claimed in claim **21**, wherein a quantity of the tailoring mechanism is three.

23. The tailoring yearn system as claimed in claim **22**, wherein a minimum distance between one end of any two of the adjacent second arcuate portions of the tailoring mechanisms close to the center point is a third distance.

24. The tailoring yearn system as claimed in claim **23**, wherein one end of the curved channel close to the center point is defined as an inflow end, and another end of the curved channel away from the center point is defined as an outflow end.

25. The tailoring yearn system as claimed in claim **20**, wherein two ends of the curved channel are respectively defined as an inflow end and an outflow end, the tailoring mechanisms are arranged one by one sequentially, and between any two of the adjacent tailoring mechanisms, the outflow end of the tailoring mechanism preceding sequentially is connected in series with the inflow end of the subsequent tailoring mechanism.

26. The tailoring yearn system as claimed in claim **25**, wherein between any two of the adjacent tailoring mechanisms, one end of the second arcuate portion of the tailoring mechanism preceding sequentially located at another end of an arcuate shape of the outflow end is located in the inflow end of the curved channel of the subsequent tailoring mechanism, and one end of the first arcuate portion of the subsequent tailoring mechanism located at another end of an arcuate shape of the inflow end is located in the outflow end of the curved channel of the tailoring mechanism preceding sequentially, and the curved channel of the tailoring mechanism preceding sequentially and the curved channel of the subsequent tailoring mechanism are partially overlapped and communicated with each other.

27. The tailoring yearn system as claimed in claim 25, wherein a minimum distance between any two of the adjacent tailoring mechanisms is a fourth distance.

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